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The Development of Technology-Based Learning Media to Enhance Short Story Reading Interest

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ABSTRACT

This study investigates the development of technology-based learning media to enhance students' interest in reading short stories, addressing the lack of engaging and relevant materials in the learning process. Despite the importance of reading, many students, particularly in grade VIII at SMP Muhammadiyah Rantau Prapat, exhibit low interest in reading short stories. This issue is often linked to the absence of interactive and technology-integrated learning resources. To overcome this challenge, a web-based application was developed, providing interactive short story materials designed to captivate students and improve their reading engagement. The study employs a research and development (R&D) approach using the ADDIE model, which consists of five systematic stages: analysis, design, development, implementation, and evaluation. A total of 30 grade VIII students were randomly selected as research participants. Data collection methods included questionnaires, observations, and statistical analysis to measure the effectiveness of the learning media. The results revealed a significant increase in students' interest in reading short stories after using the technology-based media. Statistical tests showed that students became more engaged with reading activities, demonstrating a higher level of motivation and comprehension. These findings suggest that integrating technology into reading instruction can be an effective strategy to enhance students' reading interest and overall engagement in the learning process. The use of interactive elements, such as animations, quizzes, and digital storytelling, contributes to making reading more enjoyable and accessible. This study highlights the need for further exploration of digital learning tools in different educational contexts. Future research should examine the long-term impact of technology-based reading interventions and explore strategies for broader implementation in various schools.

Keywords: Technology-Based Learning; Reading Interest; Short Story

INTRODUCTION

Reading is a fundamental language skill essential for knowledge acquisition, critical thinking, and communication. It enables individuals to interpret written symbols, comprehend information, and develop cognitive abilities necessary for problem-solving and academic success (Grabe & Stoller, 2019). As one of the core literacy skills, reading plays a crucial role in shaping students' intellectual growth and social interactions. However, despite its significance, many students struggle with reading engagement due to uninteresting learning materials and conventional instructional methods that fail to capture their attention (Afflerbach et al., 2018).

The urgency of this issue is particularly evident in Indonesia, where students consistently demonstrate low reading interest and literacy levels. According to the Programme for International Student Assessment (PISA) results, Indonesia ranks among the lowest in reading comprehension worldwide, indicating a critical need for intervention (OECD, 2019). The lack of motivation to read, particularly among middle school students, poses a serious challenge for educators. If this issue remains unaddressed, it may hinder students' ability to develop higher-order thinking skills, affecting both academic performance and long-term career prospects (Zhang & Duke, 2021). Given the increasing importance of literacy in the digital age, immediate action is required to implement more engaging and interactive reading approaches.

One of the main reasons behind students' low reading interest is the lack of engaging and interactive learning media. Traditional printed textbooks often fail to attract students who are accustomed to digital content (Coiro et al., 2019). The novelty of this study lies in its approach to leveraging technology-based learning media to enhance students' interest in reading short stories. By integrating interactive elements such as animations, gamification, and multimedia storytelling, technology-based reading materials can transform reading into an immersive and enjoyable experience (Clark & Mayer, 2016; Wang et al., 2021).

The emergence of Industrial Revolution 4.0 has further highlighted the need for digital transformation in education. While digital technology offers vast opportunities for enhancing learning, it also presents challenges, such as social media distractions and reduced attention spans (Setiawan, 2021). To adapt to these changes, educators must integrate technology into reading instruction to engage digital-native students effectively (Yelland, 2018). The incorporation of technology-based learning media can bridge the gap between students' declining reading interest and the growing reliance on digital platforms for knowledge consumption.

At SMP Muhammadiyah Rantau Prapat, students' reading interest in short stories is notably low, reflecting a broader trend seen in many schools. This issue necessitates innovative solutions that can captivate students' attention and encourage them to read actively. By introducing web-based interactive reading

applications, this study aims to create a dynamic learning environment that enhances motivation and reading comprehension. Studies have shown that digital tools, such as interactive story apps and adaptive reading platforms, positively impact student engagement and literacy development (Huang et al., 2020; Liu et al., 2022).

The visibility of this research extends beyond a single institution, as its findings can be applied across various educational settings. If successful, the implementation of technology-based learning media can serve as a scalable model for improving reading engagement on a national level. Policymakers, educators, and curriculum developers can leverage these insights to design more effective digital literacy programs tailored to students' diverse learning preferences (Pérez et al., 2022).

Therefore, this study aims to develop and evaluate technology-based learning media to increase students' reading interest in short stories. Through the integration of digital storytelling, interactive quizzes, and multimedia content, the research seeks to provide a sustainable and adaptable solution for improving literacy instruction. The expected findings will contribute to the ongoing modernization of education, making reading more accessible, engaging, and effective in today's digital era.

LITERATURE REVIEW

Student Reading Interest

Reading interest refers to an individual's tendency or motivation to engage with various types of reading materials (Afflerbach et al., 2018). In the context of education, short story reading interest pertains to students' enthusiasm for reading short narratives, which serve as an important medium for improving literacy skills. Research indicates that several factors influence reading interest, including intrinsic motivation, environmental support, and the accessibility of engaging learning materials (Schiefele et al., 2016). When students encounter reading materials that are relevant, interactive, and enjoyable, they are more likely to develop a sustained reading habit.

A major challenge in fostering reading interest among students is the increasing competition with digital entertainment, such as social media and video content, which often reduces their engagement with traditional reading (Zhang & Duke, 2021). To address this issue, educators must integrate digital learning strategies that align with students' preferences, making reading an interactive and engaging experience. Studies have shown that digital reading environments, when designed effectively, can increase students' motivation and comprehension skills by providing personalized, gamified, and visually engaging content (Liu et al., 2022).

Technology-Based Learning Media

Technology-based learning media refers to the use of digital tools such as computers, mobile applications, e-books, and online platforms to facilitate learning. With advancements in educational technology, digital learning tools have become a highly effective method for enhancing student engagement and comprehension (Wang et al., 2021). These tools can transform passive reading experiences into interactive and immersive learning activities, making it easier for students to grasp complex literary concepts.

Research indicates that the integration of multimedia elements, such as animations, quizzes, and audio narrations, significantly improves students' reading interest and comprehension (Huang et al., 2020). Furthermore, adaptive learning technologies allow students to engage with reading materials at their own pace, providing real-time feedback and personalized learning paths (Pérez et al., 2022). These innovations not only make reading more engaging but also enhance retention and critical thinking skills.

However, while technology-based media offers numerous benefits, its effectiveness depends on proper implementation. Poorly designed digital tools may lead to distractions rather than learning benefits (Yelland, 2018). Thus, it is essential to develop structured, student-centered digital platforms that balance interactivity with pedagogical effectiveness.

Short Stories as Teaching Materials

Short stories have long been recognized as valuable teaching materials due to their concise structure, engaging narratives, and rich thematic elements. They provide students with an accessible and enjoyable entry point into reading, helping them build literary comprehension, vocabulary, and imagination (Coiro et al., 2019). Short stories are particularly effective for young readers, as they present self-contained narratives that are easier to process compared to longer texts.

One key advantage of using short stories in digital learning is the ability to integrate interactive features that enhance engagement. Studies have found that when short stories are delivered through multimedia formats, such as audiobooks, illustrated e-books, and interactive storytelling apps, students show a higher level of interest and deeper comprehension (Liu et al., 2022). Additionally, gamified reading experiences, where students earn rewards for completing comprehension tasks, have been proven to increase reading motivation and enjoyment (Clark & Mayer, 2016).

By leveraging technology-enhanced short stories, educators can address the decline in reading interest and create a more engaging, student-centered learning environment. Future research should explore the long-term effects of interactive

short stories on students' literacy development and how different technological approaches impact reading motivation in diverse learning contexts.

METHOD

Design and Sample

This study employs a Research and Development (R&D) approach to develop technology-based learning media aimed at increasing students' interest in reading short stories. A quantitative research design is applied to measure the effectiveness of the developed learning media in enhancing students' reading engagement and comprehension. The ADDIE development model is used as the framework for this study, consisting of five structured stages. The Analysis stage identifies students' reading difficulties and determines the learning media requirements at SMP Muhammadiyah Rantau Prapat, including an assessment of students' reading habits, technological accessibility, and the effectiveness of conventional reading instruction. The Design stage focuses on developing the initial prototype of the learning media, ensuring that it is interactive, engaging, and aligned with student needs. The Development stage involves refining the learning media by incorporating expert feedback and preliminary trials, ensuring that the digital content is both educational and user-friendly. During the Implementation stage, the learning media is tested with grade VIII students, who are divided into experimental and control groups. Finally, the Evaluation stage assesses the effectiveness of the media through pre- and post-tests, questionnaires, interviews, and observations to measure improvements in students' reading interest and comprehension. The study population consists of all grade VIII students at SMP Muhammadiyah Rantau Prapat, with a random sampling method applied to select participants. The sample includes two groups: the experimental group, which uses technology-based learning media, and the control group, which follows conventional reading instruction. This sampling strategy ensures a balanced and representative selection of students with diverse reading proficiency levels, allowing for a valid and reliable comparison of learning outcomes between both groups.

Instrument and Procedure

The study utilizes multiple instruments to collect relevant data. Observations are conducted during the implementation phase to assess student engagement, interaction with the media, and overall learning behavior. A questionnaire is administered before and after the intervention to measure changes in students' reading interest. The questionnaire consists of Likert-scale items evaluating students' perceptions of reading before and after using the digital learning media. Additionally, interviews are conducted with Indonesian language teachers and students to gain qualitative insights into the effectiveness of technology-based learning media in enhancing reading motivation. A reading comprehension test is also included, where a pre-test and post-test assess students' understanding of short stories, measuring the impact of digital learning media on comprehension skills.

The research is conducted in three phases. In the pre-test phase, students in both the experimental and control groups complete an initial reading interest questionnaire and a short story comprehension test. During the intervention phase, the experimental group uses the developed technology-based reading media, while the control group continues with conventional instruction. This phase lasts for four weeks, with students engaging in guided reading activities tailored to their respective groups. In the post-test phase, both groups complete a second reading interest questionnaire and comprehension test to compare results and evaluate the effectiveness of the intervention.

Data Analysis

The collected data is analyzed using both quantitative and qualitative methods to provide a comprehensive evaluation of the impact of technology-based learning media on students' reading interest and comprehension. For quantitative analysis, data from questionnaires and reading tests are analyzed using descriptive statistics, including mean, standard deviation, and frequency distribution, to assess overall changes in reading interest and comprehension. Additionally, an independent sample t-test is conducted to determine statistical differences between the experimental and control groups, measuring the significance of technology-based media in improving reading interest. For qualitative analysis, data from observations and interviews are analyzed using thematic analysis, identifying recurring patterns and insights regarding students' experiences with technology-based learning. This qualitative data helps provide context to the statistical findings, offering a deeper understanding of how students engage with digital reading materials, their learning preferences, and any challenges they face during the intervention. By integrating both quantitative and qualitative approaches, this study ensures a well-rounded assessment of the effectiveness of technology-based learning media, contributing valuable insights into the modernization of reading instruction in secondary education.

RESULT AND DISCUSSION

Students' Interest in Reading

The results of the questionnaire measuring students' interest in reading short stories before and after using technology-based learning media indicate a significant improvement. The percentage of students who were very interested in reading increased from 20% to 50%, while those who were less interested or not interested at all decreased from 15% to 5% and 5% to 0%, respectively. These findings suggest that interactive and engaging digital media positively influenced students' motivation to read. The full results are presented in Table 1.

Table 1: Changes in Students' Interest in Reading Short Stories

No	Reading Interest Category	Before Media Use (%)	After Media Use (%)
1	Very interested	20%	50%
2	Interested	35%	30%
3	Quite Interested	30%	15%
4	Less Interested	10%	5%
5	Not Interested	5%	0%

These results demonstrate that students' reading motivation increased substantially after the implementation of technology-based learning media.

Students' Comprehension of Short Stories

A comparison of students' short story comprehension test scores before and after using the digital media also shows a notable improvement. Before the intervention, 45% of students scored below 60, indicating weak comprehension, while only 5% scored in the highest range (90-100). After using the technology-based learning media, the percentage of students scoring 90-100% increased to 30%, and those scoring below 60% dropped to 10%. These findings suggest that interactive media significantly improved students' comprehension skills. The data is summarized in Table 2.

Table 2: Comparison of Short Story Comprehension Test Scores

No	Score Categories	Before Using Media (%)	After Using Media (%)
1	Score < 60	45%	10%
2	Score 60-74	30%	25%
3	Score 75-89	20%	35%
4	Score 90-100	5%	30%

These results confirm that the use of interactive and multimedia-enhanced learning resources helped students develop better comprehension skills when engaging with short stories.

Student and Teacher Responses to Learning Media

Interviews conducted with both students and teachers provided qualitative insights into the effectiveness of technology-based learning media. The majority of students (90%) agreed that the digital platform made reading more enjoyable, while 80% believed it significantly increased their interest in reading. Teachers also recognized the media's effectiveness, with 85% reporting that it made lesson delivery more engaging and motivated students to participate actively in discussions. These responses are summarized in Table 3.

Table 3: Student and Teacher Responses to Learning Media

No	Response	Student (%)	Teacher (%)
1	Interesting and fun	85%	90%
2	Makes it easier to understand short stories	80%	85%
3	Easy to access	70%	75%
4	Increases interest in reading	90%	80%
5	Motivates students to learn	88%	85%

These qualitative results reinforce the effectiveness of digital reading materials in promoting engagement and learning motivation.

The findings confirm that technology-based learning media positively influence students' interest in reading short stories. The significant increase in students categorized as "very interested" (from 20% to 50%) suggests that interactive and visually engaging digital materials capture students' attention more effectively than traditional textbooks. This aligns with previous studies indicating that digital storytelling and multimedia reading tools enhance motivation and engagement (Zhang & Duke, 2021; Pérez et al., 2022). Given the rapid shift towards digital education, implementing such media can serve as a sustainable solution to improve reading interest among students.

The improvement in students' short story comprehension following the implementation of interactive learning media suggests that digital tools enhance cognitive engagement and information retention. Features such as quizzes, animations, and interactive reading prompts help students process and recall textual information more effectively. This is consistent with research emphasizing that multimedia-enhanced reading instruction accelerates comprehension and critical thinking skills (Clark & Mayer, 2016; Liu et al., 2022). These findings suggest that schools should consider incorporating more technology-integrated learning resources to bridge gaps in reading comprehension.

The positive feedback from both students and teachers suggests that technology-based learning media not only improve engagement but also facilitate a more interactive learning environment. Students expressed greater enthusiasm for reading, and teachers acknowledged that digital tools made short story lessons more effective. This supports existing literature suggesting that technology-driven instruction enhances student motivation and makes learning more enjoyable (Huang et al., 2020; Wang et al., 2021). However, while these results are promising, factors

such as digital literacy and accessibility must be considered to maximize effectiveness.

Despite the overall positive impact of technology-based learning media, several challenges emerged during the study. Some students faced limited access to devices and internet connectivity, which hindered their ability to fully engage with the digital content. This issue highlights the need for schools to improve digital infrastructure, ensuring equal access to technology for all students. Additionally, future research should explore long-term effects by implementing larger sample sizes and extended study durations to examine how technology-based reading interventions influence literacy development over time.

Based on these findings, recommendations for educators and policymakers include expanding digital infrastructure by investing in better internet access and device availability to ensure equitable learning opportunities. Training teachers on digital literacy is also essential, as educators need to be equipped with the skills to integrate technology effectively into reading instruction. Furthermore, developing adaptive reading materials should be a focus for future research, ensuring customizable learning experiences that cater to diverse reading levels.

The results of this study indicate that technology-based learning media significantly enhance students' reading interest and comprehension of short stories. The integration of interactive features, multimedia storytelling, and digital assessments fosters a more engaging and effective reading experience. Students exhibited greater motivation to read, while teachers recognized the educational value of digital tools in improving lesson delivery. While challenges such as limited device access remain, these findings highlight the potential of technology-enhanced learning in shaping modern literacy instruction. Future studies should examine long-term impacts and scalability to determine how digital interventions can be effectively integrated into national literacy programs.

CONCLUSION

This study concludes that the development of technology-based learning media significantly enhances students' interest in reading short stories. The integration of interactive digital platforms, animations, and quizzes creates a more engaging and enjoyable learning experience, making reading more appealing to students. The findings demonstrate that students who used the technology-based media showed a notable increase in reading interest and comprehension, reinforcing the effectiveness of digital learning tools in literacy instruction. Several key conclusions can be drawn from this research. First, the use of technology-based media substantially increases students' reading interest, as interactive features make reading more engaging and dynamic. Second, digital learning platforms provide greater accessibility, enabling students to read anytime and anywhere, thereby fostering independent reading habits. Third, these platforms encourage active

student participation by incorporating interactive elements such as quizzes, discussions, and assessments, leading to deeper engagement with short story content. Fourth, the findings confirm that technology-enhanced reading materials improve students' comprehension, helping them analyze and interpret short stories more effectively. Lastly, the overall increase in reading motivation and comprehension positively impacts academic performance, particularly in Indonesian language subjects.

Despite these positive outcomes, the study acknowledges the challenges of digital accessibility, such as limited device availability and internet connectivity, which must be addressed to ensure equal learning opportunities for all students. Moving forward, it is recommended that schools invest in digital infrastructure, provide teacher training in technology integration, and develop adaptive digital reading materials that cater to different learning needs. In conclusion, technology-based learning media present a promising and effective solution for improving students' reading interest and comprehension. Continued efforts in integrating digital tools into literacy education can transform reading instruction, making it more engaging, accessible, and effective in modern learning environments. Future research should explore long-term impacts and scalability, ensuring that digital innovations in education benefit a wider student population.

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